

Remarks

Reconsideration and reexamination of the above-identified patent application, as amended, are respectfully requested. Claims 1, 3-21, 23-41, and 43-60 are pending in this application upon entry of this Amendment. By this Amendment, claims 1, 12-17, 20-21, 32-37, 39-41, 52-57, and 59-60 have been amended. Support for the amendments to the independent claims 1, 21 and 41 may be found, for example, in the Specification at page 13, lines 24-28; page 14, lines 19-25; page 21, lines 4-8 (line numbers cited as originally filed), page 23, lines 13-18 (line numbers cited as originally filed), claims 2, 19, 22, 38, 42 and 58 (as originally filed, now canceled), and in the Figures at FIG. 2b, 3b, 4b, 5b, 12 and 13. Dependent claims 12-17, 20, 32-37, 39-40, 52-57, and 59-60 have been amended for consistency. Claims 19, 38 and 58 have been canceled by this Amendment. Independent claims 61-63 have been added. Support for new independent claim 61 may be found, for example, in claims 1, 3 and 4 as originally filed. Support for new independent claim 62 may be found, for example, in claims 21, 23 and 24 as originally filed. Support for new independent claim 63 may be found, for example, in claims 41, 43 and 44 as originally filed. Accordingly, no new matter has been added.

Claim Rejections - 35 U.S.C. § 112 (second paragraph)

In the Office Action mailed June 15, 2005, the Examiner rejected claims 1, 3-21, 23-41 and 43-60 under 35 U.S.C. § 112 (second paragraph). In particular, the Examiner rejected independent claims 1, 21 and 41 for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3-20, 23-40 and 43-60 were rejected for their dependence from claims 1, 21 and 41.

By this amendment, the Applicants' Attorney has amended independent claims 1, 21 and 41 to more particularly point out and distinctly claim the present invention. In particular, the independent claims have been amended to provide further clarification and to provide sufficient antecedent basis in the claims for the limitation "species." Support for the Amendments to independent claims 1, 21 and 41 may be found, for example, in the

Specification at page 13, lines 24-28; page 14, lines 19-25; page 21, lines 4-8 (line numbers cited as originally filed), claims 2, 22 and 42 (as originally filed, now canceled) and in the Figures at FIG. 12 and FIG. 13. Accordingly, no new matter has been added.

Regarding claims which depend from the independent claims, Applicants contend that these claims are patentable for at least the same reasons that the independent claims are patentable. Moreover, Applicants contend these claims recite further limitations, in addition to the limitations of the independent claims, which render these claims additionally patentable.

Claim Rejections - 35 U.S.C. § 101

In the Office Action mailed June 15, 2005, the Examiner rejected claims 1, 3-21, 23-41 and 43-60 under 35 U.S.C. § 101. In particular, the Examiner rejected the claims for failing to require any physical transformation outside of the computer.

The Applicants' Attorney has amended independent claims 1, 21 and 41 to include a limitation directed to a user output interface. Support for the Amendments to the independent claims may be found, for example, in the Specification at page 23, lines 13-18 (line numbers cited as originally filed), and in the Figures at FIG. 2b, FIG. 3b, FIG. 4b and FIG. 5b. Accordingly, no new matter has been added.

The Applicants' Attorney, however, notes that with respect to 35 U.S.C. § 101, the proper legal analysis for determining statutory subject matter initially includes a determination of what the applicants have invented and are seeking to patent. As part of this analysis, one needs to identify and understand any practical application asserted for the invention. That is, whether the invention has real-world value within the technological arts. Another way of expressing this is to ask the question whether the invention enhances or improves a human condition, or at least improves human efficiency in some respect.

Furthermore, in *AT&T Corp. v. Excel Communications*, 172 F.3d 1352 (Fed. Cir. 1999), the Federal Circuit held that “[t]he notion of ‘physical transformation’ can be misunderstood. In the first place, it is not an invariable requirement, but merely one example of how a mathematical algorithm may bring about a useful application.”

Regarding claims which depend from the independent claims, Applicants contend that these claims are patentable for at least the same reasons that the independent claims are patentable. Moreover, Applicants contend these claims recite further limitations, in addition to the limitations of the independent claims, which render these claims additionally patentable.

Claim Rejections - 35 U.S.C. § 103

In the Office Action mailed June 15, 2005, the Examiner rejected claims 1, 5, 9-15, 18, 21, 25, 29-35, 41, 45 and 49-55 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent number 6,403,314 to Lange et al. (hereinafter “Lange”) in view of U.S. patent number 6,027,884 to Lane et al. (hereinafter “Lane”). The Examiner rejected claims 1, 6-8, 16, 17, 21, 26-28, 36, 37, 41, 46-48, 56 and 57 under 35 U.S.C. § 103(a) as being unpatentable over Lange in view of Lane and further in view of *RNA Biochemistry and Biotechnology* by Barciszewski et al. (hereinafter “Barciszewski”). Dependent claims 3-4, 19-20, 23-24, 38-40, 43-44 and 58-60 were not rejected under 35 U.S.C. § 103(a) in view of the prior art of record.

The Applicants’ Attorney has amended independent claims 1, 21 and 41 to include limitations of dependent claims not rejected under 35 U.S.C. § 103(a). In particular, claim 1 has been amended to include limitations of now canceled dependent claim 19. Claim 21 has been amended to include limitations of now canceled dependent claim 38. Claim 41 has been amended to include limitations of now canceled dependent claim 58. Accordingly, Applicants contend that independent claims 1, 21 and 41, as amended, meet the substantive requirements for patentability.

Regarding claims which depend from the independent claims, Applicants contend that these claims are patentable for at least the same reasons that the independent claims are patentable. Moreover, Applicants contend these claims recite further limitations, in addition to the limitations of the independent claims, which render these claims additionally patentable.

CONCLUSION

Consequently, in view of the above and in the absence of better art, Applicants' representative respectfully submits the application is in condition for allowance which allowance is respectfully requested. A check in the amount of \$300 (small entity) is included to cover the fee for the three newly added independent claims. Please charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

The Examiner is requested to telephone the undersigned to discuss prompt resolution of any remaining issues necessary to place this case in condition for allowance.

Respectfully submitted,

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